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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/585,061 06/01/00 NORVILLE

S 9105-3/JMD

EXAMINER

IM22/0815

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INDIANAPOLIS IN 46204-5137

LINK

ART UNIT

PAPER NUMBER

1722

DATE MAILED:

08/15/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/585,061

Applicant(s)
Norville et al

Examiner
Kuang Y Lin

Art Unit
1722



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above, claim(s) 20-23 and 27-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 and 24-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claims 1-30 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2 20) ☐ Other:

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1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-19 and 24-26, drawn to a method of casting a metallic article, classified in class 164, subclass 113.
- II. Claims 20-23 and 27-30, drawn to an apparatus for casting metallic article, classified in class 164, subclass 312.

2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus of Invention II can be used in a process which is materially different from that of Invention I. For example, it can be used to cast a metallic article directly from molten metal instead of semi-solid material.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Mr. Durlacher on August 9, 2001 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-19 and 24-26.

Affirmation of this election must be made by applicant in replying to this Office action.

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Claims 20-23 and 27-30 stand withdrawn from further consideration by the examiner, 37

CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

6. Claims 13 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 13, it is not clear how the application of magnetic field can be performed without an molten metal in the vessel. In line 2 of claim 17, the word "causing" is misspelled.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(f) he did not himself invent the subject matter sought to be patented.

8. Claims 1, 17 and 24-25 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Norville. See figure in page 32.

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9. Claims 1, 17 and 24-25 are also rejected under 35 U.S.C. 102(f) as being clear anticipated by Norville.

The invention as claimed is identical to the publication by Norville. It is noted that the inventor entity of the instant application is different from the author of the publication.

10. Claims 2-16, 18, 19 and 26 rejected under 35 U.S.C. 103(a) as being unpatentable over Norville.

Norville substantially shows the invention as claimed except the cycle time. However, it would have been obvious to obtain the optimal casting cycle time through routine experimentation. With respect to claims 9, 10, 13, 16, it is conventional to use robot to perform any mechanical function. With respect to claims 11, 12, 14, 15, it is a common practice to provide cooling means and heating and/or insulating means in a molten metal container to regulate the temperature of the molten metal therein. With respect to claims 17 and 18, it is a common practice to either electromagnetically stir the molten metal to cause the same flow circumferentially or longitudinally. With respect to claim 19, it is conventional to add reinforcement particles into molten metal before casting such that to form a metal matrix composite article if the composite article is designated.

11. Claims 1-8, 13-15, 17-19, 24-26 are also rejected under 35 U.S.C. 103(a) as being unpatentable over either Flemings et al ('544) or Kono ('526) and further in view of either Winter et al ('210) or JP 1-192,446.

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Both Flemings et al and Kono substantially show the invention as claimed (the elements 10-12 in Flemings et al and the barrel 30 in Kono are considered as a vessel; the semi-solid 101 in figure 9 of Flemings et al and the semi-solid discharged into the injection cylinder 40 in Kono are considered as slurry billets) except that they use a mechanical stirrer instead of electromagnetic stirrer for forming semi-solid slurry. However, both Winter et al and Japan '446 show that it is conventional to use electromagnetic stirrer for forming semi-solid slurry in a casting process. Apparently, the electromagnetic stirrer does not have a contamination problem as the mechanical stirrer does since no part of the electromagnetic stirrer contacts with the molten metal. Also, the use of an electromagnetic force to effect vibration of the semi-molten metal is far superior to the known mechanical process (see col. 3, lines 9-12 of Winter et al). In view of the prior art teachings as a whole, it would have been obvious to use the electromagnetic stirrer of Winter et al or Japan '446 in the die casting process of Flemings et al or Kono to produce a better and purer cast product. With respect to claims 2-8 and 26, it would have been obvious to obtain the optimal casting cycle time through routine experimentation. With respect to claims 17 and 18, it is a common practice to either electromagnetically stir the molten metal to cause the same flow circumferentially or longitudinally. With respect to claim 19, it is conventional to add reinforcement particles into molten metal before casting such that to form a metal matrix composite article if the composite article is designated.

12. The patent to Brauer et al is cited to further show the state of the art.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kuang Lin whose telephone number is (703) 308-2322. The examiner can normally be reached on week day from 9:30 am to 6:00 pm.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0651.

Group Facsimile No.: (703) 305-7718 (for any document other than the amendment after final office action), or
(703) 305-3599 (for the amendment after final office action only).

kyl

8-10-2001



KUANG Y. LIN
EXAMINER
GROUP-320

1722